"We Eat too much." See page 281.
Corporal Punishment for Children. See pa

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. XIV.—No. 356. FRIDAY, JANUARY 31, 1890. [PRICE TWOPENCE.

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CANCEROUS DISEASES.

TESTIMONIALS.

The following is from Dr. John Sheerer, St. Albans, Sept. 5th, 1888.

MR. JOHN M. YOUNG, *Manager Missisquoi Mineral Springs.*

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JOHN SHEERER.

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[An Extract from "The Monthly Homœopathic Review," May 1st, 1870.]

By Dr. TUTHILL MASSY.

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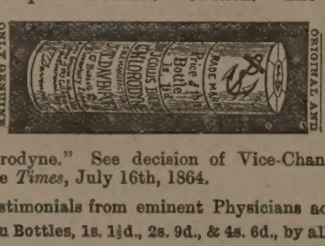

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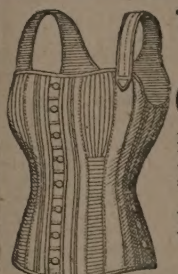

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 31, 1890.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

THERE is little to add to the news of the influenza epidemic, save, perhaps, the welcome intelligence that it is dying out. I observe that the Medical Department of the Local Government Board is endeavouring to obtain information upon the origin and mode of distribution of influenza in Great Britain by the issue of a circular to medical officers of health. Investigation into the subject is also being made by Dr. F. Parsons and Dr. Bruce Low of the Local Government Board. The queries of the circular run as follows: Has any "influenza," particularly if characterized by much nervous depression, severe frontal headache, or various muscular pains, shown itself in your district? The date of the first occurrence (as far as you know) of such an influenza. The date of commencement of any extensive prevalence of such influenza. Any opinion that you have formed (or that you wish to modify) as to the mode of origin of introduction of the disease; and as to its method of spread. Have you observed among domestic animals any unusual complaint; and in what animals, and with what symptoms? Illustrations or observations as to the behaviour of any observed influenza, especially as to the intervals of attack in members of households, its dissemination amongst particular communities, and its incidence on particular localities.

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PERSONALLY, I have had rather a severe experience of the ailment. I left London, on a Gilchrist Lecture tour of one week in Yorkshire, on January 20th. On that date I was seized during the night with violent pains in the limbs and back. Sleep was out of the question; unless seven hours of disturbed nightmare-vision can be dignified by the name of repose; and I arose weak, feverish—my temperature was 103 degs. on the morning of the 21st—and feeling utterly miserable and depressed. Salicylate of soda relieved the pains somewhat, and reduced the temperature; but, unwilling to forego my lecture-engagements, I started for Goole from Leeds on the 21st, and contrived in much weariness of body and mind to lecture to a large audience. That night came an acute crisis, in the shape of profuse perspiration, to which end fifteen grains of antipyrin had doubtless contributed; and I awoke on the morning of the 22nd fairly well, but weak.

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FROM the 22nd to the 24th I slowly picked my way back to strength, lecturing through the whole week every night; but the pains in back and limbs continued till the Friday. Then came the final instalment of the disease, in the shape of a crop of herpes on mouth and nose—this eruption being familiar enough as the sequence of an ordinary cold; and from this latter irritating symptom I am only now recovering as I write. My conclusions regarding the influenza are, that it is certainly a specific and germ-induced disease; and that its distinctive features are found in the sudden and high rise of the temperature, and in the equally sudden fall; and, above all, in the terrible mental depression which accompanies the attack. The pains in the limbs are also characteristic. For three days I felt as though I should slip at every step in going downstairs. I think it is of mildly infectious type; and either quinine or compound tincture of cinchona (the latter in a teaspoonful dose, before meals, in water) may be relied on as a suitable pick-me-up during convalescence.

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SPEAKING of washing and cleansing, a contemporary says that Sir Edwin Chadwick remarked that what he considered a great sanitary factor was the power of washing cheaply with tepid water. The German army, he might mention, was the lowest death-rated of any in Europe, being only about five in a thousand, while our army was eight, France ten, and Italy eleven. One means of this was the factor of washing with tepid water. That, he had shown in England, was the great means of reduction of the children's diseases in the district schools. In Germany half a million soldiers were being washed with tepid water at the cost of about sixpence a hundred, soap included. He expected that they would be able to show a power of washing children with tepid water at the rate of a working expense of not above a penny for a dozen, and they would accomplish it at the rate of a little more than three minutes to each child. He had long shown elsewhere that pigs that were washed put on one-fifth more flesh than the pigs that were unwashed, and more than this was the result with children.

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AT all events, it was by the operation of this factor with others, notably ventilation, that the children's diseases in the district schools had been got rid of, and he believed the same result would be found practicable under sanitary arrangements almost everywhere. Many places might be made exemplary for the safety of children in schools from children's epidemics. But added to the power of washing was the power of ventilation, chiefly by the invention of Maxim, the great gun improver of America—ventilation with warm air in winter, or cool in summer. The death-rate among school teachers was no less than twenty in one thousand—that was to say, more than four times the death-rate in the royal navy. He believed that death-rate was reducible immensely by this method of ventilation. At present filthy-skinned children were massed together under conditions that were productive of children's diseases, and equally or more injurious to the teachers themselves, and he believed that these evils were possible of reduction in every town. He hoped the mayors and representatives of boroughs would give attention to this power of wash-

ing for cleansing the population, and not only for cleansing them, but for staying epidemics.

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To expel mosquitoes, take of gum camphor a piece about one-third the size of a hen's egg, and evaporate it by placing it in a tin vessel and holding it over a lamp, taking care that it does not ignite. The smoke will soon fill the room and expel the mosquitoes, and they will not return, even though the windows should be left open all night. Another writer says that he learned the secret of successful warfare against these pests when living in the swamps of Louisiana, where, in summer or winter, mosquitoes swarm. For some years life was unendurable and no meal could be eaten in peace. But all at once there was a change for the better. Bars and screens were often out of place, but there was almost an immunity from insects. He had just changed his coloured boy. The newcomer explained how he kept the "critters" away. He burned small pieces of gum camphor on the cook stove, and used a secret preparation he called "sudekillo." The gum camphor alone is ample for the purpose, and need only be used two or three times a week.

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My readers will remember that Mr. Milnes, M.A., in a recent criticism of vaccination statistics relative to a small-pox outbreak at Perth Infirmary, maintained the powerlessness of re-vaccination to protect against small-pox attack. I am glad to note that Dr. Graham, of Perth, in the *Lancet* of January 18th last, gives Mr. Milnes what must be considered his quietus as regards the whole question. Dr. Graham says, "Mr. Alfred Milnes, in his letter of December 14th, insinuates that he has more reliable information with regard to the re-vaccination in the Perth Royal Infirmary than I can possibly have. He quotes from a letter written by one of the infirmary directors, giving the result of a conversation with the house-surgeon. I quote from my own notes, and, as I had sole charge of the small-pox cases in the infirmary, most men would consider mine to be the more reliable information. To prove to your readers the worthlessness of Mr. Milnes' statements, and how competent his authorities are, I may mention that when my attention was called to the cases which I diagnosed to be small-pox, three had already reached the pustular stage of the disease.

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"There never was any doubt," says Dr. Graham, "that those cases had not been re-vaccinated, and I have the written testimony of the medical officer of health to whose care they were removed that they had not been re-vaccinated. Of the remaining cases, four were nurses, and were never seen by the house-surgeon at all. The last case was re-vaccinated on October 4th, by the house-surgeon, acting under my orders, and small-pox was developed on October 5th. Both of the fatal cases had only the faintest trace of one primary vaccination, and were practically unmodified cases of small-pox. This, to my mind, is a sufficient reason to account for the result." Unless we are to adopt the astounding theory that Mr. Milnes (in London) is likely to know more about the outbreak than Dr. Graham (in Perth), the medical attendant, we must, I think, allow that the latter has made out his case. Mr. Milnes' error in the case appears to have been that—not unusual, by the way, with anti-vaccinators—of building up an opinion about the case from what, according to the above data given by Dr. Graham, seems to have been very imperfect information.

Original Essays

"Life is not to live, but to be well."—*Martial.*

CORPORAL PUNISHMENT FOR CHILDREN.

By A Parent.

Every now and then paragraphs in the medical journals warn parents and teachers, wisely and effectively, against boxing the ears of children. This is a point to which, as also to the general question of corporal punishment at large, the close attention of the public should be directed.

As a matter of health, boxing the ears is utterly indefensible. It is a barbarous and cruel form of punishment, and one which rightly renders the inflicter of it liable both to the criminal law (for an assault) and to the civil law for damages, should injury to ear or brain arise from the chastisement. A smart box on the ears is very liable to rupture the "drum" of the ear, which, as most readers know, is a membrane tightly stretched across the ear-passage at its end, and forming a barrier or partition which converts that passage into a *cul de sac*. Supposing a child has had, what is not at all uncommon, a perforated drum-membrane, as a result of scarlet fever or measles, then boxing the ears is singularly liable to set up inflammation of the brain. From every point of view, then, this form of punishment is erroneous and barbarous. It should never be practised by any one, parent or teacher; and it might very well be distinctly forbidden by an enactment to that effect on the pages of our statute law.

The question of corporal punishment for children is, however, one of much wider scope than is included in a few words of utter condemnation of boxing the ears. Recently, society at large was amused, and in some degree shocked, by the revelations which a society journal contrived to make regarding the practices of a woman who advertised her capabilities, muscular and otherwise, in the way of birching refractory girls. The cold-blooded callousness shown in these revelations was certainly calculated to inspire just indignation against the person who could so far lower herself and affront her sex by condescending to play the part of a nineteenth-century slave-driver.

Very properly, the public distrust all such announcements and practices, for the plain reason that, if corporal punishment is necessary at all, and if it is to effect any good purpose, it must be carried out in a very different fashion from that in which the energetic "lady" in question preferred to act as a kind of whipper-general to society at large. Yet, as straws show the way the wind blows, the incident to which I have alluded is not without its value as teaching us at least one side of an important social subject. The institution of a widespread system of education, such as is represented by our Board Schools, inevitably carries with it the question of discipline of children, and of their training in the ways of morality and good behaviour.

It seems next to impossible that, to deal properly with masses of boys—girls may be left out of the question—many of wild, ungoverned, and mischievous temperament, and to instil that discipline, without which a state of educational anarchy would be certain to arise, corporal punishment should be allowed to become a dead letter. As a parent, I say this boldly, believing that the great mass of thinking persons will agree with this opinion. I conceive that the odious prosecutions of teachers, by

parents, before magistrates, for having administered even slight punishment to really incorrigible boys must only excite ridicule and indignation in the mind of any one who has had boys to deal with at all.

If, in that bigger school we name the world, it is needful for the law to hold punishment, more or less severe, over the heads of the scholars as a deterrent to crime and as the just penalty of its commission, the argument that school-life should present some amazing exception to the rule of later life, can only be named of amazing character. The school is society on a small scale, wherein good and evil mingle, and wherein badness, equally with nobility of character and industry, are duly represented. Moral suasion accomplishes much in the way of discipline. The personal power and predilections of the teacher count for a very great deal in the maintenance of order, and in the carrying out of that discipline, without which all educational efforts are vain. The generality of boys are neither debased nor inclined to rebel against needful rules which demand good behaviour and moral conduct. But now and then (I speak as a teacher and parent both) one meets with an utterly incorrigible boy, who is insensible to every appeal made to his honour, who knows nothing of manliness, and who sets at nought every consideration which regulates respectability. For such a boy there is but one terror—the cane or the strap. He is, as a rule, a thorough coward. He fears physical pain above all things else; and, if my own experiences are to be trusted, a smart caneing, or other form of corporal punishment, is the only thing calculated to instil into his mind a respect for authority and for the common decencies of conduct.

There is yet another phase of this question which parents, who naturally dislike the idea of corporal punishment, neglect utterly to take into consideration. I allude to the fact, amply verified by my own experiences, that one badly-behaved lad in a class will demoralize the whole set of boys. What he is seen by the others to be permitted to do, they, in turn, think they may do also. Discipline, in such a case, is gone if the drastic remedy is not applied. Moral suasion, sarcasm, and kindness will be tried in turn, but will fail. The behaviour goes on from bad to worse, the contagion of example spreads, and all educational work is at an end. But when the offender has been brought to book, smartly and effectively, and when punishment has been administered before the class to the *mauvais sujet*, a change for the better is speedily apparent. I only give my own experiences once again when I say that one administration of cane or strap in the term, has cured all symptoms of disorder in a class, and improved once and for all the moral tone of its members.

Corporal punishment is thus a necessity of education—that is the conclusion to which we are driven. It is a *dernier ressort;* to be kept in the background certainly, and only to be resorted to when the occasion is extreme; but it is a necessity, nevertheless, of modern school-life, and will continue to be so until we attain to some form of Utopia or other that none of us, as far as I can discern, are likely to see in our day and generation at least.

By corporal punishment, of course, I mean, judiciously administered correction. A teacher or parent in a white heat of passion is not a proper person to administer it. Teachers are only human, and, like all other men, are apt when insulted or worried to lose patience and temper both. But an appeal to facts shows that only rarely does it happen that any excessive punishment is inflicted. The worst thing which can happen to any educational system, in my opinion, is for its directors to intimate that a responsible teacher is to have no power of taking the law into his own hands in this matter. As regards the well-behaved pupils this edict matters not. It is not those latter we have to consider, but the incorrigibles, who in time, it may be added, corrupt and render insubordinate those who at first were all that could be desired in their school-life.

The history of our great public-schools, which have turned out the best blood of our country, is a complete answer to the assertion that corporal punishment is an antiquated barbarism. Boys will always be very much alike, to whatever rank they belong, and in whatever age they live; and it is tolerably certain that the teacher, as the temporary parent of his charges, must at least be invested with those powers of correction, which, even in the best regulated families, have occasionally to be called into requisition.

I hold that corporal punishment is not in itself a degrading thing. When, as a boy at school, I received castigation for offences against discipline, like my neighbours, I had to "grin and bear it;" but there is nothing in the ethical code of the healthy-minded schoolboy which causes him or his companions to think any the worse of a fellow-pupil who has been unfortunate enough to come under the master's correction. Doubtless, there is less flogging than there used to be; and this is a thing wherein to rejoice. But I trust, as a nation, we shall never be found to truckle to that namby-pamby sentimentalism which regards physical correction as a bane, and which seeks an antidote for it in the mawkish sentimentality of an appeal to a police magistrate for a summons against a teacher, who has really been simply doing his duty by the subject of the castigation, and by all his other pupils at the same time.

THE CHEMISTRY OF THE HOUSE.

(SECOND SERIES.)

By Dr. Drinkwater, F.C.S.,
Lecturer on Chemistry in the Edinburgh Medical School.

FOURTH PAPER.

THE AIR WE BREATHE.

(Continued.)

It need hardly be said that air is a material substance, yet the ancients were doubtful as to this; or, at least, if they believed it, they could hardly prove it. Aristotle firmly believed that air did not possess weight, and he has carefully described an experiment which he thought went to prove it; but his experiment was fallacious, as shown by the light of modern science, and we now know that, like all material bodies, air has the property of weight. One cubic foot of air weighs about one ounce. Now, if air has weight, and if we have forty-five miles of air above us, this column of air, at any one point, must exert pressure. We have next, therefore, to prove that there is a pressure, and then to measure its force. It will not be a very difficult matter to prove the pressure. Fill an ordinary wineglass with water—it must be filled to the very brim—now lay on the top, by a sliding motion, so as not to disturb the water, a piece of writing-paper, and the glass may be inverted and no water will run out, because the pressure of the air pressing upwards on the piece of paper prevents it falling. A number of conjuring tricks all depend on the pressure exerted by air. The inexhaustible bottle and the magic funnel are examples. Any liquid contained in either cannot flow as long as an opening above the layer of contained liquid is closed by a finger, but remove the finger, and air getting in exerts its pressure and forces the liquid out.

It necessarily follows that if the air exerts this pressure it must possess weight, although some of the earlier experimentalists and philosophers thought otherwise. Aristotle weighed a bladder full of air, he then pressed out the air and weighed the empty bladder, believing that the second weighing would be less than the first by the weight of air pressed out. But he found the weights identical, and hence concluded that air had no weight. The experiment as then performed is fallacious, because in reality he only procured the actual weight of the bladder itself. This may seem at first sight paradoxical, but a little thought will explain it away, like most scientific paradoxes. When a substance is weighed in air, it of course displaces a certain amount of air, and the indicated weight is less than the true weight by the weight of the air displaced. If we weigh a piece of lead in air, and then weigh it in water, the second weight will be less than the first by the weight of water displaced. The bladder full of air will therefore weigh a certain weight *minus* the weight of air displaced, by the bladder. When the bladder is emptied it does not displace this weight of air, and therefore the two weights are identical.

If, however, we exhaust by means of an air-pump a glass flask, and carefully weigh it and then let in air through an accurately filling stopcock, we find that air has weight; and it is found that one cubic foot of air weighs about one ounce and a quarter. Now, it is shown that if air has weight it must exert pressure; and our comfort, nay, our very existence, depends in great measure on this pressure. It has been estimated that the atmosphere surrounds the globe to the height of forty-five miles, so that we are practically living at the bottom of an ocean of air forty-five miles deep. Of course it is not an atmosphere capable of supporting life to this height; indeed, it is only with difficulty that we can breathe at a height of five miles, but still, there are reasons for believing that there are traces of what we call air at this enormous height. The air on the surface of the earth is denser—that is to say, its particles are pressed more closely together—than the air at the top of a hill, the increase of density being due to the weight of air above it. The pressure exerted by the air must therefore be greater in the valley than it is on the hill-top. At the sea level, under ordinary circumstances, this pressure amounts to about fifteen pounds on each square inch of surface—an enormous pressure, truly, and one which we can perhaps only fairly value when we remember that the total pressure on the body of an average-sized man will amount to a weight of between fourteen or fifteen tons.

How can we support this enormous weight is a question that will at once be asked by an inquiring reader, and it is a question which can be answered without much difficulty. All gases, in common with liquids, have the property of transmitting pressure equally and in all directions. A piece of paper one inch square lying on the ground is pressed to the ground with a pressure of fifteen pounds; but as air is underneath it as well as above it, it is pressed upward with an equal pressure of fifteen pounds, so that a slight muscular exertion is all that is required to lift it. If the air were removed from the under surface, then the pressure would make itself felt, and lifting up the piece of paper would require the same force to be exerted as that required for lifting a fifteen-pound weight. The familiar example of the boy's sucker will illustrate this fact. Here wet leather is pressed close to a stone, say, and the air underneath the sucker is pressed out, so that the upward pressure is removed. The downward pressure then shows itself, and the leather sucker can only be removed from the stone by lifting up an edge of the sucker and readmitting the air.

It is due again to this pressure that water does not boil until we heat it to a temperature of 212 degs. Fahr. When we say water boils, we mean that it is converted into vapour at that temperature, and the pressure of our atmosphere prevents it being turned into vapour before that temperature is reached. A little thought will at once show us that any alteration in pressure must necessarily alter the boiling-point; an increase of pressure raising the temperature, and a decrease, of course, lowering it. The "digester," a piece of apparatus found in well-furnished kitchens, is a good example of the application of the fact in raising the boiling-point; whilst the so-called vacuum-pan, used by the sugar-boiler, is an example of the means employed for lowering the boiling-point, by pumping out the air from the boiler.

An experiment may be easily tried by any household chemist which well illustrates the principle. Procure a Florence oil-flask (one of the old-fashioned, round-bottomed flasks); remove the wicker covering and well clean it; put some water in it, and boil it over a gas-flame. Whilst it is boiling, cork it up and remove the gas. Now turn it upside down and pour cold water on the rounded end, when the water in the flask will immediately begin to boil. This apparent paradox is easily explained when we remember the atmospheric pressure. The surface of the water in the flask is pressed upon by the atmosphere, and prevented from turning into vapour to any great extent; but the heat applied to the flask causes the water to press against the air: and so on the battle goes, the air at first getting the best of it. But at last a temperature is reached when the pressure of the steam overcomes the pressure of the air, and the water boils. The upper part of the flask soon becomes filled with steam, the air being gradually expelled. If it now be corked, we have simply steam and water in the flask; and the steam only is exerting pressure on the surface of the water and preventing it boiling. When cold water is poured upon the flask, the steam is condensed; the pressure consequently removed, the result is the water boils, but, of course, at a lower temperature.

On examining a piece of honeycomb sponge, a number of large apertures will be noticed on its exterior surface at irregular intervals. These are known in sponge science as *oscula*, and are the termination of the canals or larger passages which intersect the sponge skeleton; while all the surfaces between these contain numberless small passages called *pores*, which all run into one or other of the large passages in such a way as to provide for the free circulation of water throughout the whole sponge. Through the pores, by the rapid vibration of minute whip-like hairs, called *flagellæ*, which are enclosed in little chambers, like a couple of saucers placed face to face, and formed in the slime-lining of the pores, currents of water, carrying food and oxygen for the sustenance and growth of the sponge, are carried in, while the vitiated water, out of which the living slime has extracted the oxygen and food, with all the effete exuviæ, and useless matter, which the currents may have carried in, are expelled through the large passages or oscula.

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Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

WE EAT TOO MUCH.

A RECENT writer in an English medical journal shows conclusively that, while certain classes, owing to the stress of poverty, cannot obtain the nutriment they really need, the majority of people eat too much. Fortunately a moderate degree of over-eating does not appear to be markedly injurious. The digestive apparatus, though compelled to do more work than is really necessary, proves equal to the demands made upon it, and does not break down or get seriously out of order. This is but one illustration out of many that might be given, showing how the marvellous mechanism of the human body adopts itself to conditions more or less abnormal. It is lucky for the average man that physiological laws are not of Medo-Persic inflexibility. He can violate them to a limited extent without incurring the penalty, though he finds that, if he goes beyond that point, the punishment is swift and sure.

Careful investigations prove that the daily "destructive metabolism," or, in plain English, the inevitable waste and wear of the body, which is the measure of the *work* it does, varies but little for different occupations. A diet of from twelve to fourteen ounces of chemically dry food, if the ingredients are in proper proportion and readily digestible, is sufficient to keep the average worker in good health. One part of nitrogenous to seven or eight parts of non-nitrogenous food is found to be a fair combination. A very small addition of stimulants appears to increase the amount of possible work; but moderately free drinking diminishes it. Women eat less than men, after making allowances for differences in weight and work. Where a man eats nineteen ounces, a woman of the same weight and equally active habits eats only fourteen or fifteen ounces. This latter allowance, as will be seen from the figures given above, is more than enough for a hard-working man, even when all meat is excluded from the diet. It is no uncommon thing, however, for a man of average size and activity to eat double this amount, or from twenty-five to twenty-seven ounces of chemically dry food in a day. In fact the writer to whom we are indebted for these statistics does not hesitate to assert that the majority of people in England eat literally twice as much as they need.

We are inclined to think that excess in eating is at least no less common in America than in England. The abundance, variety, and cheapness of food are naturally favourable to this over-indulgence. If we do not "live to eat," we are very far from making it the law of our diet to "eat to live." The palate is tempted to intemperance by appetizing dishes when it would be fully satisfied with a normal amount of plain and wholesome food. Probably there are few of our readers who will not have to confess that often the appearance of the puddings or pies revives the appetite which had been completely appeased by the meat and its concomitants in the preceding course at dinner. We feel that we have had enough, but the new and savoury appeal to our love for the good things of the table is too much for us. We have been eating because we were hungry; we now go on eating because we enjoy doing it. It is not necessary, but it is "nice." Let us congratulate ourselves that, though gluttony and intemperance are bestial sins and cannot escape their punishment, moderate over-indulgence in eating is, as we have said, apparently a venial offence against the laws of health; but let us beware of presuming too much upon the mercy with which nature tempers justice in the enforcement of these laws.

WHEN AND HOW TO TAKE POTASH, SODA, AND AMMONIA.

THERE are two ways of correcting acidity of the stomach; one is with acids, and the other with alkalies (soda, potash, or ammonia). The symptoms of a sour stomach are known by those who suffer with it, and are easily made out. They are relieved by alkalies. But when the acidity is due to loss of nerve-force, fruits and acids, vinegar, &c., will often prove curative. The best indication for acids is the desire for sour things.

BICARBONATE OF POTASH.—A Tabloid containing five grains of this salt will promote the flow of gastric juice if taken before the meal. Taken after meals, this salt corrects "the acidity due to an excessive production of acid, or to the acid fermentation of the starch, sugar, and fat in the food." It also "renders an important service in cases of indigestion of fats," as in diseases of the liver, &c. Generally speaking, bicarbonate of potash is the most useful of the alkalies in the indigestion of obese subjects, and of the gouty and rheumatic (Bartholow). It is highly recommended for dyspepsia, rheumatism, gout, scalding flow from the kidneys, &c. The dose is from one to four Tabloids with water.

BICARBONATE OF SODA.—One high authority says, "The soda salts are to be preferred in the alkaline treatment of stomach diseases; but the potash when it is desired to promote oxidation in the system, or to alkalize the renal flow." While soda is a splendid salt to relieve acidity for the time being, its protracted use is liable to increase the tendency to sour stomach; and it is a question whether some of the soda-rolls, &c., so abundantly taken with a cup of tea do not induce acidity after a time. Soda is given in atonic dyspepsia, pain between the shoulder-blades, and flatulence without constipation, but should seldom be taken before meals. It should be noted that "the ordinarily accepted soda-water of commerce is simply a solution of carbonic acid in water charged under pressure. The lozenges are made with a hard basis of gum acacia and mucilage, and are less useful than the Tabloids of Bicarbonate of Soda, sold by most chemists" (Dr. Wm. Murrell). The dose of the Tabloids is from one to five or six with water.

CHLORIDE OF AMMONIUM.—If, however, there exists dyspepsia with neuralgic pain, this will be the most likely of the alkalies to do good. It is largely used in dyspeptic states dependent on derangements of the liver, and is of great service. Its power to control neuralgic pain is remarkable. The dose is from one to four Tabloids (each five-grain), swallowed with water, after meals.

CATARRH, CATARRHAL DEAFNESS, HAY FEVER.—A NEW HOME TREATMENT.—Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness, and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N.B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of 2½d. stamp to pay postage, by A. H. Dixon & Son, 337 and 339, West King-street, Toronto, Canada.—*Christian Advocate.*

Sufferers from catarrhal troubles should carefully read the above.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

THE COMING MAN AND HIS WIFE.

BY PROFESSOR R. H. THURSTON.

I AM always inclined to ask, first, what may we believe to be the probable form and likeness of the coming man and his wife. I imagine that when we look back from our home in the unseen universe, ages hence, we shall see, without much doubt, a race of men differing from those of to-day much as the man of to-day differs from his simious, perhaps simian, ancestors.

The brain will be developed to meet the more complex and serious taxation of a more complex and trying civilization; the vital powers will be intensified; the man, reducing the powers of nature still more completely to his service, will depend less on the exertions of his muscles, and they will be correspondingly and comparatively less powerful, though they will probably, nevertheless, I imagine, continue to grow somewhat in size, as they unquestionably have grown since the middle ages; the lungs must supply aëration to a larger and more rapidly circulated volume of blood, richer in the phosphatic elements especially needed for the building-up of brain and nerve; the digestion must supply its nutriment in similarly increased amount and altered character and composition; the whole system must be capable of more rapid, more thorough, and more manageable conversion of the energies of the natural forces to the uses of the intellect and the soul which inhabits it.

If so much be granted, it is easy to see something of the nature of the change in the physical man that must gradually take place. The brain will enlarge in its anterior even more than in its posterior parts, and the great forehead will probably overhang a heavy but mobile face, having a god-like intelligence of countenance; with eyes large and prominent; with large nostrils; with a set of jaws at once fitted for the reduction of grain foods to pulp and to give basis for muscles capable of expressing great ideas by word and by play of feature. The chest will be large; the lungs capacious and free in operation, promptly self-adjusting to all demands and all variations of demand, and fitted to aërate enormous volumes of fluid flowing in from the veins. The digestive organs will necessarily be suited to develop and apply the phosphatic nutriment of grain and fruit foods; the liver, and the spleen especially, producing those fats which make the main part of brain and nerve-tissue—the abdomen thus growing with the lungs.

The limbs may probably be longer; better cushioned with fat than now; smaller in proportion to the rest of the body, as to weight at least; though we may presume that this change will be made with positive gain, on the whole, in grace and general power. A more generally intelligent race will pay more attention to the preservation and cultivation of the physical powers by exercise and every sanitary device, and this will unquestionably aid in the development of a noble physique. The coming man will be tall, and free and lofty of carriage, as will befit a being full of noble thoughts and high aspirations, and his progress toward the infinite in all that is good and great will be commensurate with his ennobled powers of body and mind.

The woman of the coming race will have a similar evelopment. Mind and body altering in similar directions, her intellectual face and her noble head will be carried above a no less impressive form. Ages of further growth of her always-controlling affections will have conferred upon her, even more than upon her consort, those beautiful perfections of manner and those attractions of face and figure, coming of the freer and freer play of the affections and graces of home, which must always distinguish in a superlative degree the lovelier sex. She will grow with the ages and through the ages; her form will gain in grace and strength, in roundness and beauty, and she will, as always, lead man in his approach toward heaven. Easier lives and more intelligence, a better application of knowledge, and in all respects a better life, will give to both the most that nature can confer. As evil dies and virtue survives and strengthens, they will, hand in hand, advance continually, and with continually greater ease and speed, toward the perfect life.

BURNS AND SCALDS.

BY LEROY M. YALE, M.D.

AMONG the injuries that befall the occupants of the nursery, burns hold a prominent place. Inquiring fingers come in contact with the stove, the tea-kettle, the lamp-chimney, and a multitude of such things. The pain of a burn demands prompt mitigation, and if the burn is deep its prolonged healing will need a good deal of care, while a judicious first dressing may beneficially influence the subsequent course of the cure.

The severity of the injury depends upon the extent as well as the depth of the burning. A small burn of the hands, for instance, from touching a hot stove, even if deep, destroying tissue, healing slowly, and finally impairing the use of the hand, may produce little constitutional disturbance; while a very slight burn or scald, hardly blistering the skin, if extensive, and particularly if on the body, may produce great shock. The treatment, therefore, of burns may require both general and local measures. The handling of shock, if from a burn, is the same as if from any other injury, and has in a previous number been sufficiently spoken of.

Burns are classified by surgeons into various "degrees," sometimes with unnecessary prolixity. For our purpose it is enough to speak of burns which simply irritate the skin, burns which blister, and deep burns killing the true skin and perhaps deeper tissues. For the first kind, it is only necessary to alleviate the pain, which is often great, and with children, to quiet their alarm. The principal points are to protect the part from the air, and if practicable, to make the protecting substance a soother of pain. Common substances, found in nearly every house, which are useful for the purpose are flour, finely-powdered starch, and oil, which are good protectors. Bi-carbonate of soda (the "baking soda" of the kitchen), dusted on, is, by reason of its alkalinity, especially soothing. If by chance, carbolic acid is in the house, it may be thoroughly mixed with oil, in the proportion of one part of acid to fifty of oil. This applied to the burnt surface where it is sound partly benumbs the pain. If there is blistering, and the blisters are broken, the carbolic acid mixture should be applied cautiously, particularly if the exposed surface is considerable, as the acid is sometimes absorbed, and produces poisonous effects. A safer antiseptic dressing can be made by mixing boric acid with oil or vaseline, in, say, the proportion of one part of boric acid to twenty of oil. The dry powders before mentioned—flour and starch—can be used on blistered surfaces. Better yet, perhaps, is powdered soapstone

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(talc), if at hand. Molasses is often used as a protective if nothing better is at hand, and a batter of molasses and flour was formerly used in some hospitals. A mixture, which is a standard application, is the carron oil, which is the lime liniment of the drug shops. It is made by mixing lime water with an equal quantity of cotton-seed oil or of linseed oil; the former is pleasanter in odour. Here the alkali, which is soothing, is mixed with the protective oil. The burnt part should be further protected by a layer of soft cotton or linen stuff, or of cotton batting. The absorbent cotton, now so much used, is best of all.

Deep burns are, so far as domestic practice goes, to be treated precisely as are simple blister-burns. Whatever dressing is used, it should be remembered that the wounded part is to be kept as quiet as practicable, and the dressing changed not too often. If the skin is not broken the change of dressing will not be very painful, and fresh powder may be dusted on, or fresh oil added easily. If the surface is broken the frequency of the change of dressing must depend upon the amount of discharge. If it is slight, and the patient is comfortable, the dressing may remain two or three days. But no dressing should remain after it is foul or irritating. In changing, if the burn is extensive, involving the length of a limb, for instance, remove a part of the dressing at a time, and quickly replace it, to avoid the discomfort arising from exposure to the air.—*Babyhood.*

He had Quite a Bill at the Druggist's.—A contemporary gives the following particulars relating to the physicking of a patient in the olden time, the good old times, when people took physic and plenty of it, firmly believing that it did them good. The individual in question, Mr. Samuel Jessup, died, May 17th, 1817, at Heckington. He was defendant in a trial for the amount of an apothecary's bill at the Lincoln Assizes. The evidence at the trial gives the following details: In twenty-one years (from 1794 to 1816), he took 226,934 pills supplied by a respectable apothecary in Bottlesford, which gives an average of 10,806 pills a year, or twenty-nine each day. In the last five years preceding 1816 he took the pills at the rate of seventy-eight a day, and in the year 1814 swallowed not less than 51,590. "Notwithstanding this," says the writer, "and the addition of 40,000 bottles of mixture, besides juleps and electuaries, set out in fifty-five closely written columns of the apothecary's bill, he lived to the age of sixty-five years."

Oil from Wood.—A French scientific journal states that the extraction of oil from wood, in Sweden, is becoming year by year a more important industry. Those parts of the trees which have hitherto been regarded as useless, such as the stumps and roots, are no longer left in the forests to rot, but are subjected to various methods of treatment, by which not only wood oil, but also turpentine, creosote, acid of vinegar, charcoal, and tar, are obtained from them. The oil, as it is now usually extracted, cannot be burnt in ordinary lamps, for it smokes too much. But it may be used in special lamps, which are not dissimilar to the usual photogen lamps. The latter can easily be adapted to wood oil, and when the oil is mixed with a certain quantity of photogen, it may be consumed in ordinary lamps. It costs about threepence per pint, it does not explode, and lasts twenty-five times longer than photogen. When intended for lighting, it is extracted wholly from pines and firs. Thirty factories in Sweden make its extraction part of their business, and the production is now considerable.

TOWN LIFE AND THE SKIN.

Whatever may be the advantages of a city life, in the way of agreeable society and the advantages of many educational pursuits, there is no doubt we have to reckon with another phase of things, in respect of the deteriorating influence the close town-existence exerts on the bodies and minds of city-dwellers at large. The well-to-do escape this influence, by reason of their frequent holidays and journeys to the country; but those closely confined to London and other great cities suffer correspondingly from lack of the conditions that make for health. Pure air, early hours, plain food, and exercise are all so many conditions which favour health; but which are exactly those the Londoner, as a rule, cannot enjoy.

In one respect, however, the city man can help himself, and that is in looking well after the health of his skin. The skin sympathizes acutely with the general health of the body, and, in turn, the body's health may be said largely to depend on the welfare of the skin, which is an organ getting rid perpetually of the body's waste matters. Plenty of water—both cold and tepid as a bracing measure, and warm as a cleansing measure—is needed by the city-dweller; and he must also use a pure soap devoid of alkaline excess. Town life, with its dust-laden air, necessitates frequent washings with soap and water, the action of the soap being to extract the oil from the skin, and so to dry and shrivel the tissue, and predispose it to wrinkles and eruptions. Not only so, but the natural oily film upon the skin is the very best protective from the evil effects of wind and air. When the oil is withdrawn, the horny layer of skin deteriorates. The ancients used to anoint the skin, and that frequently, and especially after washing. The value of a cream is recognized even in our time, but, of course, it soon spoils. Vinolia, which is a plastic and emollient cream, is a pure and elegant nutrient and tonic for the skin, and may be freely used by young and old. The Soap of this name is also the purest of articles, and will aid the city-dweller materially in the preservation of the health of his integument.

The Drug Coca.—Three hundred years ago a Spanish traveller described its use by the Indians, who chew a paste made from the leaves, in order to keep off hunger and thirst while on their journeys, and enable them to undergo fatigue. At present the plant is largely cultivated in the Andes, from the Argentine Republic to New Granada, the chief depôt being at Las Paiz, Bolivia. Nearly all the produce is consumed in South America. It grows best in the mild and moist climate of the lower mountains at a height of 2,000 to 5,000 feet above the sea level. Two or three crops of the leaf can be gathered in the year; and the largest leaves are preferred, as containing most of the alkaloids which make the virtue of the plant. The leaves have an odour of blended hay and chocolate when broken, and are of a rare green colour, Since the discovery of cocaine the leaves have been exported to Europe; but the sea voyage is found to rob them of the alkaloids, and therefore it is the custom now to extract these in South America and then export them for the manufacture of cocaine.

Special Notice.—The best stimulant for dietetic and other purposes is the "Skerryvore" (Registered) Blend of Five Matured Scotch Whiskies, certified of the utmost purity by Mr. E. G. Clayton, F.C.S., Member of the Society of Public Analysts. Sold only by John Twatt, 36, Argyle-place, Edinburgh. Price 20s. per gallon, bottles and cases included.—[Advt.]

Our Medicine Chest.

"THE aim of using drugs is not so much to destroy diseases as to aid and assist the natural powers to overcome the disease-principle."—*Holland.*

THE alkaloid discovered in the common gorse, "whin," or furze, of Europe (*Ulex Europæa*), termed ulexine, is of a most powerful character. It appears to arrest all voluntary movements and reflexes by paralyzing the motor tract of the spinal cord and the trunks of the motor nerves. The heart-muscle is paralyzed, though preliminary thereto there is an increase of arterial pressure. Further, it possesses a diuretic action similar to that of caffeine, but more definitely marked.

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IT may be observed that a sprain is frequently treated with a liniment advised by physicians. It is indeed painful to see a physician writing a prescription for a sprain. There are but two indications in the treatment of sprains: (1) To provoke rapid absorption of the fluid effused around and within the joint; and (2) to favour cicatrization of the torn parts by immobilizing the articulation. Now, the modes of treatment hitherto in vogue do not fulfil these two indications. Massage would seem to present some real advantages, but it can be of little service in the case of severe sprains, and mild injuries would probably do as well under rest alone. An elastic bandage, the depressed parts being covered with a layer of cotton so as to prevent too great a pressure over the prominence, and thereby causing sloughs, will meet the first indication, and by its use in procuring rest it will meet the second indication. This bandage acts like massage in promoting absorption, and also secures immobility of the joint. It is of equal service in sprains complicated with rupture of points of insertion, whereas massage would be productive of harm in cases in which splinters of bone were torn away. The practice of relieving the mind of the patient by giving him something to do in the way of applying bad-smelling liniments is a pernicious one, and really shows an unprofessional or unscientific attendant.

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THERE is nothing to compare with the tincture or a strong infusion of capsicum annuum mixed with an equal bulk of mucilage of gum arabic, and with the addition of a few drops of glycerin, as a cure for a black eye. This should be painted all over the surface with a camel's-hair pencil and allowed to dry on, a second or third coating being applied as soon as the first is dry. If done as soon as the injury is inflicted, this treatment will invariably prevent the blackening of the bruised tissue. The same remedy has no equal in rheumatic stiff neck.

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INCENSE for churches is made as follows: Gum olibanum, nine ounces; benzoin, five ounces; storax, two and half ounces; sugar, two ounces; cascarilla, one and a half ounces; saltpetre, three ounces. Powder and mix.

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As a snuff for cold in the head, Rabow declares that a snuff made of two parts of menthol, fifty parts finely ground coffee, and fifty parts powdered sugar is a sovereign remedy.

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BALM of gilead salve is made as follows: Mutton tallow, half a pound; balm of gilead buds, two ounces; white pine gum, one ounce; red precipitate, half an ounce; white sugar, one tablespoonful. Stew the buds in the tallow until the strength is obtained, and press out or strain, scrap the soap and add it, with the other articles, to the tallow, using sufficient unsalted butter or sweet oil to bring it to a proper consistence to spread easily on cloth. When nearly cool stir in the red precipitate, mixing thoroughly. This may be more appropriately called an ointment. This is an old-time remedy, having been used in America for about fifty years.

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HYDROGEN peroxide is now employed for bleaching silk, feathers, hair, ivory, bones, bristles, &c., and will doubtless soon be used for bleaching wool, and, if it was cheaper, even cotton. For bleaching delicate materials, such as wool, feathers, &c., it should not be too strong; a solution of one in ten is strong enough, and a bleaching vat of this solution may be used for quite a long time if the strength be kept up by fresh additions of hydrogen peroxide. The purer the peroxide is the better it will work, and care should be taken to avoid the presence of things which decompose it, and, of course, render it useless, such as metals, even a nail, iron rust, &c. The strength of a solution is very easily estimated by titration with permanganate. As a general disinfectant it is not convenient, but is suitable for distribution as spray in sick-rooms.

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DESCHAMPS gives two formulas for tooth-powders as follows: Acid—Venetian talc, four drachms; cream of tartar, one ounce; carmine, five grains; essence of menthol, fifteen drops. Alkaline—Venetian talc, four ounces; bicarbonate of sodium, one drachm; carmine, five grains; essence of menthol, fifteen drops.

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PRACTITIONERS who see much of ozæna, or disagreeable nose-discharges, know well that it is one of the most intractable of diseases. Even with frequent washing out of the nasal passages with antiseptic lotions and sprays, with medicated bougies, and with cotton-wool plugs applied in the manner recommended by Gottstein, only the most transitory deodorization of the breath from the nostrils can be effected, and patients and their friends are driven almost to despair. Any new suggestion for the relief of this disgusting complaint will therefore be welcomed. Dr. W. Ebstein has lately reported very satisfactory results obtained by Dr. Rosenbach with balsam of Peru. The mucous lining of the nasal fossæ is painted every day with the medicament, and a plug of cotton-wool soaked in it is left in the deep parts of the nose. By this means Dr. Rosenbach has succeeded in cases in which every other antiseptic and deodorizer had been tried in vain. It is not probable, however, that experienced practitioners, who have often been disappointed with the effect of the most promising suggestions for the cure or mitigation of nose-discharge will be disposed to pin their faith too lightly on any new remedy, more especially, perhaps, in the case of Peruvian balsam, which seems just at present in some danger of becoming a panacea.

CHEMICAL ANALYSIS.—DR. DRINKWATER, Lecturer on Chemistry in the Edinburgh Medical School, undertakes the Analysis of Water, Foods, Wall-Papers, and of all other products and articles connected with Household Health and Commercial Interests. Terms on application to Dr. Drinkwater, Chemical Laboratory, 41, Chambers-street, Edinburgh.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE WARMING OF SCHOOLS.

By Dr. A. N. Bell.

(Concluded.)

Hot-air furnaces are simply enclosed stoves placed outside the apartments to be warmed, and usually in basements or cellars of the buildings in which they are used. The manner of warming is virtually the same as by *indirect* steam heat, by the passage of air over the surface of the heated furnace or steam-heated pipes, as the case may be, through flues or pipes provided with registers.

The most essential condition of satisfactory warming by a hot-air furnace is a good chimney draught, which should always be stronger than that of the hot-air pipes through which the warmed air is conveyed into the rooms; and this can be measured by the force with which it passes through the registers. A chimney draught thus regulated effectually removes all deleterious emanations; for if the chimney draught exceeds that of the hot-air pipes, all the gaseous emanations from the inside of the furnace and from crevices, and if the furnace is of cast-iron and overheated, all the gases around it on the outside will be drawn into the chimney.

Closely connected with this requirement for the chimney draught is the regulating apparatus for governing the combustion of fuel, the draught of the furnace. This should all be below the grate; there should be no dampers in the smoke-pipe or chimney, and all joints below and about the grate should be air-tight. The fire-pot should be lined with brick, and entirely within the furnace, but separate from it, so that the fresh air to be warmed cannot come in contact with the fuel chamber. A large heating surface of the furnace is a well-recognized condition of both economy and efficiency, and absolutely essential for effectual ventilation. As a rule, the calculation should be ten square feet of surface to every pound of coal consumed per hour when in active combustion; and the grate area should be about one-fiftieth of that of the heating surface. For the deficiency of heat, or the failure of some of the hot-air pipes in certain winds and weathers in large school-houses, or for specially exposed rooms, the best addendum is an open fire-grate, as before mentioned.

But with a view to the best means of distributing the heat, regulating the temperature and purity of the atmosphere, it is requisite that certain proportions be observed between the size of the shaft or shafts for the inlet of fresh air and the hot-air pipes for the distribution of the warmed air. The area of the smallest part of the inlet or inlets (for it is sometimes better to have more than one) should be about one-sixth of a square foot for every pound of coal estimated to be burned hourly in cold weather; and to prevent, in a measure, the inconvenience of one hot-air pipe drawing from another, the collective area of the hot-air pipes should not be more than one-sixth greater than the cold-air inlet. These proportions will admit the hot air at a temperature of about 120 degs. when at zero outside, and the velocity through the registers will not exceed five feet per second.

With these provisions in detail, and those with reference to ventilation applicable to all modes of warming in school-houses of moderate dimensions, hot-air furnaces may be made to supply the chief advantages of the more expensive methods of steam and hot water.

Steam heat is that which is accomplished by means of heat generated in the furnace of a boiler, either within or without the building to which it is applied, the heat being expended upon water, which is vaporized, and the steam generated thereby distributed in small pipes as the medium of imparting the heat.

Steam-heating is divisible into two methods—*direct* and *indirect*. The first, or direct method, corresponds to the heat by stoves; and the indirect corresponds to hot-air furnaces. In the direct method the heater stands in the room which is to be warmed, and consists of coils of pipe, encased or otherwise, or of ornamental boxes. Its special advantage over the indirect method is the warming of the surrounding walls.

In the second, or *indirect* method, the coils or lines of pipe are placed in the basement or cellar, or in flues in the walls or under the floors, and the fresh air is warmed in the same manner as when it passes over a hot-air furnace.

The special advantages of steam heat over stove and furnace heat are the facility with which it may be applied to large buildings; avoidance of the foul gases which may escape from an overheated or imperfectly regulated stove or furnace; and when the boiler is outside the walls of the building to be heated, freedom from the risk of fire.

Its disadvantages are, for small area, expense in applying and conducting it; the length of time required in getting heat after starting the fire; and troublesome noises in the pipes due to the condensations and expansions of steam from irregularity in the distribution of heat and deviations in the lines of the pipe.

Hot-water heating is effected by the circulation of hot water through a system of pipes so arranged that the water as it is heated flows in accordance with the laws of specific gravitation. It may be distributed with the same facility as steam, over any extent of area, and has the advantage of communicating heat immediately that the hot water begins to flow—in much shorter time than is required for converting it into steam—and is wholly free from the noises of steam heat, which give it a special advantage for school-houses.

The *best* distribution of warmth by both *indirect* steam-heat and hot-water heat is by running the pipes under the floor, or rather between double floors, and distributing the heat by means of perforations through the upper one. A constant supply of fresh air warmed and distributed by this means greatly promotes ventilation.

Finally, no matter what the system of heating, the importance of an abundant supply of *clean* fresh air, and exhaust-shafts to carry off foul air, equally applies to all systems. The air-flues of all sorts should be perfectly smooth and air tight, and should never form acute angles. Brick, plaster, and cement flues have absorbent surfaces, liable to contamination from any impurity in the air which passes through them, and may become sources of danger. Hence chimneys which are not also used for smoke-flues are not so good as smoother surfaces; but in any event, when used exclusively as exhaust-flues, should always be provided with gas-burners or a heated pipe.

The size of the flue for the withdrawal of foul air is an important consideration which should never be omitted. According to Morin, one of the most distinguished authorities on ventilation and warming, a flue eleven

inches square and sixty-six feet high, provided with a seven-feet gas-burner, will withdraw 13,300 cubic feet of air per hour. But a fifty-foot burner in the same shaft will remove only 23,000 cubic feet per hour—so much higher temperature is required to produce the greater velocity. The size of the flue, therefore, should be so proportioned as to produce the necessary ventilation with a velocity through it of four or five feet per second. The draught will be in proportion to the square root of the height of the chimney.

A SATURATED solution of cyanuret of potassium, applied with a camel's-hair brush, will remove marking-ink from linen. Wash afterwards in cold water.

THE ORIGIN OF PUMILINE.—The *Pinus Pumilio*, or mountain pine, is found extensively in the mountainous districts of eastern and south-eastern Europe. It is one of the most characteristic of the pines, and it seems unfortunate that the essential oil was not introduced into the Pharmacopœia instead of the fir-wood oil, which is so much more irritating. Large forests of Pumilio Pine extend in the Alpine districts nearest to the line of perpetual snow, but at this high altitude the tree becomes stunted, and may be compared to a shrub. It is, however, the stunted growth that yields the finest essential oil, to which the pleasant fragrance is due. The air of all pine forests naturally contains a proportion of the volatile emanations from the trees, and on account of the wholesome character of these emanations such an atmosphere has been recommended to invalids from the earliest ages. Pliny, in his Natural History, tells us that a residence among pine-trees was recommended to sufferers from diseases of the lungs, and Hippocrates was well acquainted with the value of inhalations of various balsamic substances. In later times some health resorts have depended almost entirely for their reputation on the pine forests near which they are situated. At Arcachon villas are built in the wood, so that the patients may breathe an atmosphere fully charged with pine, night and day. Bournemouth owes no little of its repute to its firs. But, as we have seen, *all pines are not the same*, and the volatile products of different varieties produce various effects. All give off more or less of the volatile products, but some of these are irritating and unpleasant, like the common turpentines; while the fragrance of others is proverbial. The Pumilio Pine is the most fragrant of all, as was well known to the late Dr. James Brown, when he wrote, in his great work on "Arboriculture," that "it contains a fluid giving off a very fragrant smell, which is different in its perfume and qualities to the resin or fluid of any other pine-tree." We now know that the fluid in question is an essential oil—the *Oleum pini pumilionis*—which has been obtained in a state of great purity, and introduced by G. & G. Stern under the fanciful name of "Pumiline." Messrs. Stern have registered the word "Pumiline" in order to protect themselves against bad imitators. This essential oil is in some respects allied to other terebinthinates, but "differs manifestly from them," according to Professor Attfield, F.R.S., "in its peculiarly pleasant fragrance, in other physical properties, and in certain chemical characters."

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"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

PREVENTIVE MEDICINE.

THE idea that it is possible to prevent disease is one which of late years has been slowly but surely gaining ground. This is true both of the medical profession itself and of the public. Medical men largely concern themselves with the causes of epidemics and other ailments, and preventive medicine has come to assume a very definite place in the lists of medical studies. Every medical officer of health is a disciple of this preventive phase of the healing art. The health of communities is watched over by these officials as carefully in the light of prevention as of cure. Conditions which are known to favour disease are abolished by law, and the inroads of ill-health are checked by the watchful eye of authority. As regards the public, on the other hand, we see how preventive medicine has grown in importance by the increased attention which is being paid to the laws of health. The causes of disease are no longer mysterious. The fever which of old was treated as a thoroughly mystical outbreak, or even as a "judgment," the reason of which was not to be questioned, far less explained, is nowadays traced to its source.

Even the problems of inheritance, which, in its inevitable and inexorable sweep of law, causes the products of parental disease to reappear in the offspring, are being studied to sure and certain advantage. It would seem to be a hopeless task to prevent inherited consumption, or gout, or scrofula, from exercising its full and dire effects on the progeny of an affected stock. Yet hygiene steps in, and with cheering voice assures us that by due and special care of the disease-tainted offspring the prospects of long life are by no means to be regarded as beyond their reach. Preventive medicine in this sense is really the study and exercise of the laws of health. The notion that health is a quantity or product which no more depends on chance for its continuance than does the law of gravitation is happily becoming fixed among us. If people wish to prevent disease, they can only do so by attention to the laws which govern the production of health on the one hand, and disease on the other. This knowledge, for the most part, is easy of acquirement.

The causes of disease are not difficult to ascertain. Impure food, water, and air, injurious trades, inherited ailments, unwise habits or customs, filthy surroundings, and insanitary houses—such are the common sources of most of the physical evils which beset us. If a direct example be desired of the certainty with which the prognostication of disease may be made, we may find ample illustration in the reports of our own and other medical officers of health. Typhus fever, for instance, is a disease of overcrowding. It breaks out in the impure air of our slums; air contaminated by the organic matter—representing our bodily *débris*—which is given forth from the lungs of humanity. In this soil typhus germs breed and grow. The sanitarian can, therefore, very readily prophesy that, given persistent overcrowding, an epidemic of this malady is tolerably certain to occur. In so declaring he is only re-echoing his constant experience. Certain conditions give origin to certain diseases, and it is this knowledge which forms the basis of all attempts to save

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SIR,—I have been suffering off and on for over two years from acute rheumatism, but about eight months ago it assumed a chronic form. I have tried many remedies, but could find no permanent relief. On the 7th March last a gentleman to whom I had written and informed of my affliction very kindly sent me six packets of your BRAHEE SUGAR POWDERS, advising me to try them. I did so, and by God's blessing I found great relief, when the gentleman very kindly and generously sent me twelve packets more. I persevered in the use of them—four powders a day—and I am thankful to the Lord I am now nearly recovered. The pains I experienced and suffering I endured have left me; the swelling in my legs has disappeared. I can now walk fairly, sleep has returned to me, and I have gained my appetite; and the only evidence of rheumatism remaining is the contraction of my hands, which, I trust, will eventually disappear.

Had it not been for the kindness of this gentleman mentioned above in giving and recommending your powders (and who would, if necessary, confirm my statement), I should, I believe, never have regained as well as I have health and the use of my limbs.

I am, sir, yours truly, SARAH PEARSON.

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life by preventing the first attacks of the ailments which tend to decimate our populations.

In many other and more special directions, however, science is working for us and against disease in this preventive aspect. The successful search after the causes of ailments is the pivot on which the whole fabric of preventive medicine swings. The case of the human body is strictly analogous in this matter to that of the grape. As a living, growing fruit, the grape is not subject to disease, or to changes which interfere with its welfare. But if the investing skin of the fruit be punctured, certain well-marked actions are set up within its limits, which practically result in its destruction. From the air, germ-life gains access to the interior of the grape, and fermentation or allied destructive actions ensue. Similarly, in the case of the human body, so long as there is no breach of its surface, no lesion or opening for the admittance of germ-life from without, it remains free from certain grave disorders.

Once admitted to the human province, these germs work out their own special developments, and as a result disease appears. From this declaration, it follows that the search into the causes of disease has largely assumed, of late years at least, the form of an investigation into the germ-life which everywhere surrounds us. This idea of preventing germs from attacking us may be said to lie at the foundation of preventive medicine. Things have greatly changed in the medical world within the last quarter of a century. The cause of a vast number of disorders is now set down to the multiplication of germs within the animal frame. To search out these germs, to trace their development, and to ascertain how they may best be destroyed, are the aims of modern sanitary science. From consumption to woolsorters' disease, from scarlet fever to cholera, and from diphtheria to pleuro-pneumonia—all are laid at the door of the omnipresent germ. But escape from the multitude of germs would almost seem a hopeless task. If they are present everywhere around us, in air, earth, and water, in our food, and even in our clothing, and in the walls of our houses, the task of fighting them would seem to be of no avail. It is true that preventive medicine assures us that the robust man, in virtue of his health, is able to resist the germ attack to which his less healthy neighbour succumbs.

But a robust *physique* is not the invariable possession of humanity by any means, and science, admitting as much, has turned to another phase of research by way of saving us from the unwelcome visitations of our microscopic enemies. This newer phase is, of course, as old as Jenner's fame. It is possibly much more ancient than the old crude practice of inoculation; but it is certain that at present it occupies the foremost place in the thoughts of science which battles with disease. The principle to which we allude is really that of "inoculation" for disease. Vaccination is a familiar instance of such a practice, and the *rationale* on which it is founded is by no means difficult of comprehension. The fact has long been known that as a rule one attack of certain diseases prevents the occurrence of a second attack. This law, of course, is not without its exceptions, but it is sufficiently well-established to render its existence and operation past a doubt. The explanation of the immunity from a second attack which is thus conferred by a first seizure is not a matter of agreement among scientists.

Two theories at least have been advanced to account for the phenomena. Thus one view, which is known as the "exhaustion" theory, holds that the germs in a first attack seize upon and consume the special materials on which they subsist. It holds that as these materials are thus exhausted by the attack, germs which subsequently gain admittance to the body can find no pabulum or source of nutrition. The case may be made plain by a comparison between fermentation and disease. The yeast plants which cause fermentation can only grow and multiply so long as sugar is present in the fermenting fluid. When all the sugar has become split up into alcohol and carbonic acid gas fermentation ceases for lack of material. If fresh yeast plants are added to such an exhausted soil no fermentation is possible, and so it is held with the body. The first attack of fever exhausts the soil in which the germs grow, and there is no chance of their finding for a second time a local habitation.

Now the second view of matters, opposing the "exhaustion" one, is called the "antidote" theory. Here it is held that the first attack of the germs has produced in the body some substance or other which is fatal to a second growth. The soil, in other words, has been poisoned against a second attack of the like germs. Which of these views should obtain our assent is perhaps an immaterial thing in view of the fact that in one way or the other we are usually saved from a second visitation, but the principle thus tacitly laid before us by Dame Nature has not been lost sight of by "that restless, cause-seeking animal we call man." He has endeavoured to imitate nature in his fight against disease. If, in the natural order of things, one attack prevents a second, why, asks the scientist, should we not artificially fortify ourselves against even a first onslaught of disease. This consideration has given rise, then, to the latest phase of preventive medicine, that which, for want of a better name, we may call the idea of "inoculation."

Confessedly, this mode of protecting ourselves against disease-attack is still in its infancy, but what we do know of its success in actual practice—among the lower animals especially—leads us to hope and believe in its ultimate triumph as an aid to combat many of our physical misfortunes. Let us see what science has already accomplished in this field of research. There is a disease of fowls known as "chicken cholera," which in France and elsewhere has proved of singularly fatal nature. It has been placed beyond a doubt that this ailment is due to the multiplication in the blood of a special germ. Pasteur has intimately studied the life-history of this microbe or germ, and has made us acquainted with its whole life. Inoculated with such germs taken from an affected fowl a healthy fowl soon dies. This is comparable to nature's own mode and method of infection.

When the scientist cultivates the germs of fowl-cholera, he may find his artificially-bred germs as powerful as are the original ones; but when the germs are kept exposed to pure air at a certain heat for some weeks, their virulent properties are found to undergo a very marked diminution. Thus Pasteur found that after eight weeks' exposure the germs, formerly so fatal, appeared to have lost their poisonous effects. Now, if these modified germs be employed to inoculate a chicken, the bird certainly develops a slight illness, but soon recovers. Nor is this all. For when the inoculated bird is treated with the full-strength germs it does not suffer at all, while its neighbour, which has not been inoculated, treated with the original germs, soon collapses and dies. Clearly, we have here lighted on a principle of preventive medicine which, while it runs parallel to vaccination itself, promises to prove of even wider application than is that well-known procedure.

So far successful has Pasteur's inoculation for fowl-

cholera been, that whereas ten per cent. of the birds died in certain districts prior to his discovery, less than one per cent. succumbs now. Of anthrax or splenic fever, which is so fatal to cattle and sheep, and which gives to man the fatal "woolsorters' disease," much the same tale may be told. Once upon a time every animal seized with this disease was bound to die. Now over 1,700,000 sheep and 90,000 cattle have been inoculated successfully with the modified germs of splenic fever. Last year it is stated that 269,599 sheep were successfully treated by inoculation, in addition to 34,464 oxen. What preventive medicine in its saving of animal life must mean to the commercial prosperity of the French farmers may be better imagined than described. To human needs the method of inoculation has long been extended, as we all know, in the case of vaccination as a protective against the once dreaded small-pox.

More recently Pasteur has applied his method to the prevention of hydrophobia. The poison germ of hydrophobia is contained in the saliva of the rabid dog. Pasteur has traced this poison in its special effects on the nerve-centres. A little of the spinal cord of a rabid dog injected into the blood of a healthy one produces rabies. According to the method of inoculation, we may largely prophesy the time which will elapse before the disease appears. By a series of culture-methods Pasteur has succeeded, as in the case of the fowl-cholera and of the splenic fever, in weakening the germs of rabies, so that to-day we send our bitten friends to the Pasteur Institute at Paris to undergo the necessary inoculations which have for their aim and object the prevention of the dreaded hydrophobia. Statistics prove that there has been a remarkable diminution of fatalities from hydrophobia in the case of Pasteur's patients; and it may be regarded as a veritable triumph of this method that it is able literally to rescue mankind from the risk of an impending and painful death.

The day of preventive medicine has, however, but barely dawned. Much more yet remains to be worked out, proved, and tested, ere we can say that our ancient enemies in the shape of infectious diseases have been put to rout. But the work proceeds, and preventive medicine in this light stands perhaps the noblest of all the works in which the man of science can engage.

INFANT AND INVALID FOOD.—Messrs. Ridge & Co., of the Royal Food Mills, Kingsland, N., write as follows: "With reference to the article in your issue of December 6th, under the heading of 'Infant Mortality,' permit us to inform you that Ridge's Patent Cooked Food has been several times analyzed—upon the last occasion, in 1884, by Drs. Charles H. Piesse, F.I.C., F.C.S., and Wm. Johnstone, F.I.C., F.C.S., who then reported it as 'the most perfect Food we have examined, extremely suitable for invalids and persons of weak digestion.' We have again submitted our Food to those eminent public analysts, and their certificate states (dated 8th January, 1890), 'We are pleased to be able to confirm the results of our analysis and our report, made nearly six years ago, by our present examination of Ridge's Food, the details of which we subjoin. Ridge's Food, when prepared ready for the infant, is, in itself, like milk, a complete and perfect food.'" For infants which are above the age of eight months, Ridge's Food is thoroughly well adapted, and for such, as well as for invalids, it has frequently been recommended in our pages. It is thoroughly digestible and nutritious. Below the age of eight months, of course, the mother's milk, or its equivalent, is to be alone regarded as the proper food for an infant.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Lead Pipes and a Pure Water-supply.—Though the literature pertaining to lead impurities in water due to the use of lead pipes is already extensive, it may not be without interest to refer briefly to a paper on the subject recently contributed to the *Gesundheits Ingenieur*, by Mr. O. Leonhardt, a German sanitary engineer. After briefly reviewing the various experiments made in the past to determine the influence of temperature and galvanic action on the proportion of dissolved lead in water, the efficiency of filters and tin-lined lead pipes, &c., Mr. Leonhardt details the experiences gathered in connection with the water-supply of the town of Dessau, Germany. It has been shown that the presence of lime salts in water does not appreciably effect its action on lead, but that, be the water either hard or soft, the presence of free carbonic acid favours lead solution. In the Dessau water a proportion of from 34 to 71 m. g. of free carbonic acid per litre was determined, the samples being procured from a number of different points in the distributing mains. After ineffectually trying several means of neutralizing the solvent action of the water on the pipes, and of giving the latter an internal protective coating, it was determined to free the water as much as possible from entrained air, and to neutralize all free carbonic acid in it. To accomplish the first object, the matter, instead of being pumped directly into the distributing mains as was then done, was pumped into a reservoir where much of the entrained air could escape. This alone had the effect of reducing the proportion of lead in the water by more than 50 per cent. To counteract the carbonic acid, the method was at first tried of suspending in the water bags of finely powdered limestone. This, however, did not accomplish the desired purpose, and the limestone was therefore subsequently thrown in loosely. As a result of these combined remedies the proportion of oxide of lead per litre of water, which originally had amounted to 4·463 m. g., was reduced to 0·037 m. g. The admixture of the limestone to the water, which at first was accomplished by specially stationed attendants, is now carried out automatically by machinery, with entirely satisfactory results. The method has been in use since March, 1888.

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Urn-Burial.—By the adoption of urn-burial, all that concerns the artistic side of the cemetery would be changed. One of the larger burial-grounds, now closed, perforce, in a time less than an ordinary life, would suffice for the burial of many ages, under the altered conditions. The present tendency to neglect and desecration would be counteracted by the fact that each living generation would be as much interested in the care and keeping of the cemetery as those that had gone before. This gives at once what is an absolute necessity from the artistic and sentimental point of view—absolute permanency for the resting-place of the dead. That charming author, Dr. Oliver Wendell Holmes, was moved to indignation by the removing and alteration of monuments in America, and wrote as follows: "The most accursed act of vandalism ever committed within my knowledge was the uprooting of the ancient grave-stones in three at least of our burial-grounds, and one at least just outside the City, and planting them in rows to suit the taste for symmetry of the perpetrators. The stones have been shuffled about like chessmen, and nothing short of the Day of Judgment

will tell whose dust lies beneath any of those records, meant by affection to mark one small spot as sacred to some cherished memory. Shame! Shame! Shame! that is all I can say. It was on public thoroughfares, under the eye of authority, that this infamy was enacted. I should like to see the grave-stones which have been removed or disturbed, and the ground levelled, leaving the flat tombstones. Epitaphs were never famous for truth, but the old reproach of 'Here lies' never had such a wholesale illustration as in these outraged burial-places, where the stone does lie above, and the bones do not lie beneath." This passage, so fiery for the most genial of writers, might be carefully studied by the philanthropists who enjoy turning London churchyards into playgrounds. If permanency were obtained, the knowledge that our cemeteries would be sacred for all time and jealously guarded would influence those who would find in them a new field of art-work. The great revival of taste has caused the most careful attention to be bestowed upon the designs of the merest trifling details of our houses and life; this would be extended to the urns and rest-gardens of our dead. The gruesome meretriciousness and temporary handsomeness of the varnished wooden coffin, and its plated fittings, are not pleasing objects for the eye to dwell on; smothered with flowers it is just passable in its ugliness. But who can walk through any museum or collection without being struck with the beauty of the ancient urns? Without mentioning in detail the noble urns of the Vatican and Borbonico Museums, there are lovely specimens in our British Museum, of all shapes, simple and intricate, plain and decorated, of marble and porphyry, of terra-cotta and of glass. It was a Grecian urn which inspired Keats with the well-known poem, opening, "A thing of beauty is a joy for ever." The urn of the pauper might be as perfect in its curves and proportions as that of the greatest prince, although in material and decorations they should differ. In building tombs and columbaria for the reception of urns, the wealthy patrons of art could encourage the creation of magnificent edifices. For people of purer and simpler taste, a plain tomb placed among groups of rarest trees, forming a delicious feature in the landscape of the country, the park, or the garden, might make the home of the ashes of the pioneer in far-off lands, or of the soldier who had fallen in the tropics, which could be brought back without painful effort to rest among their kindred. Such places would be a fitting resort for the living, for meditation, aspiration, and prayer. One such spot in the midst of a busy town would form the text of a continuous sermon, such as no city grave-yard can preach. In our wealthy communities all that is noble in sculpture, painting, and mosaic would come naturally to the ornament of such buildings; cloisters might be used, and portions of our cathedrals and churches adapted for the reception of urns. Around the new buildings, if possible, there should be lawns and groves, and the best loved and most illustrious should be commemorated in groups or single specimens of fine trees. Nothing trifling, nothing frivolous, or incongruous, should be admitted, and these places would be not only resting-places for the dead, but would grant a measure of peace to the living. Never again would the prying antiquary or fanatic revolutionist be able to desecrate the actual bodies of the dead.—*W. A. Willis.*

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The Labour of Sanitarians.—There is one important factor that must shortly enter into the problem of universal sanitation to a much greater extent than ever heretofore. Sanitary science has as yet but weakly attempted the full solution of this very difficult problem. The question, What shall we do with our foreign immigrants? is of no less interest to the science of sanitation than it is to the science of government. To the professional politician its seriousness extends no further than the securing of the foreign vote for this or that party. By the politician's methods the question is rendered more perplexing. Discrimination is thrown to the winds, and our cities shelter quarters filled with the pauper and debased element which makes the solution of the problem, from the sanitarian's point of view, the most grave and difficult. This does not embrace that thriving, industrious, intelligent class found among our best citizens, but it relates to that class found in all cities amid shiftlessness, filth, and disease. Not in one city, but in all cities, they exist in their indigence and squalor, living in woeful disregard of all sanitary requirements, without moral or civil restraint, void of decency and self-respect, and with no sense of the natural obligations of life. These quarters form lodging places for all manner of diseases, especially those filth-diseases which are preventible. It has lately been shown in London that the deaths occurring in such quarters greatly increase the death-rate of that city as compared with the death-rate reported from the better portions of the metropolis. Evidences of the same character have been gathered from divers other sources until the question of the housing of the poor has become a serious one, and has attracted the attention of municipal authorities, humanitarians, and philanthropists. Such lodgings are not only infected themselves, but they form centres from which infection spreads to communities which would otherwise be free from diseases thus given a foothold. The question is, How are these evils to be corrected? There is little hope in municipal authorities. These places receive but little attention from civil powers. Even law is loosely enforced. It would probably be difficult to enforce sanitation through the ministration of penal laws. This class of people is ignorant of every requirement of health and of the importance of all hygienic rules. The beginning of this reformation must be sought in education. For this we must, to a great degree, look to our health boards supported properly by the State. Our cities must set an example of cleanliness in keeping the streets, alleys, and walks clean. Cleanliness is contagious the same as filthiness, and from the street it is but a short step to the homes and lives of the people. Poverty may produce rags, but indolence does produce filth. Water is plentiful, but exertion is scarce. The sanitarian has here a duty to perform in rescuing this class from the low state into which it has fallen. In it must be instilled the higher aspirations of life and its greater value. These demoralized and demoralizing elements must be made to assimilate the principles of a better civilization and adjust themselves to the harmonies of higher civil, moral, and physical conditions. They must be brought up from their low state to an appreciation of the duties of citizenship and the obligations of life. The view before the sanitarian is not a pleasant one, but in it he sees a labour of years.—*The Sanitary News.*

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The Psychology of Living.—What may be described as the psychology of living is the mental state produced by the circumstances of life upon mankind. This condition varies largely not only with each individual person, but almost with each nation, and is, practically speaking, purely a matter of temperament. It is the nature of some persons always to be despondent, however much

their surroundings may conduce to serenity of mind and to a favourable view of life. This despondency may not necessarily be due to any mental deficiency; it is oftentimes merely the reflex of a temperament which is as natural in its development as is the growth of an arm or leg. Neither does it necessarily lead to suicide, but when the circumstances of life happen to become somewhat more exacting, and are deprived of their roseate hues, then the act of self-destruction is taken seriously into contemplation, and is often consummated. Such a person acts toward himself as in other ways he acts toward those with whom he comes in contact. He shuns a person whom he dislikes, and he claims to decide for himself whom his friends shall be. Similarly, he decides that he objects to living, and proceeds forthwith to destroy himself. It is impossible to believe for a moment that all suicidal acts are the outcome of mental aberration. There is no doubt Voltaire was right in holding that the possession of a large amount of courage was necessary before a person could take his own life. But so much is it the case that most suicidal acts are primarily dependent upon a naturally despondent temperament, that it is quite possible to believe if every despondent person with no better prospects than Mr. Micawber were gifted with the sanguine impressions of that individual, we should quickly hear less of the illogical act of suicide, and less of the complaints of the burdens of life. A sanguine temperament is unquestionably a most valuable possession, and, moreover, a highly serviceable acquisition in furthering the aims of life and in advancing the interests of those to whom it belongs. Mr. Micawber was no impossible creation of the great novelist's mind; there are, happily, men to whom the same sanguine view of life is ever present, and it is impossible to deny that among them many of the trials of life are in consequence deprived of much of their bitterness, and rendered more easy to be borne. Thus, a despondent temperament has necessarily to be subjected to the same discipline as a bad temper, or any other evil habit or feeling which brings misfortune in its path and evil upon its possessor.—*The Medical Press.*

A TRIBUTE TO A USEFUL INVENTION.—"Reform Club, Pall-mall, S.W., January 15th, 1890. DEAR SIRS,—Mr. Gladstone desires me to thank you for the very useful Cork Mat which you were kind enough to send him on his birthday.—I am, yours very faithfully, HERBERT J. GLADSTONE. Messrs. Wm. Rankin & Sons, Glasgow."

A CURE FOR DIPHTHERIA.—The following remedy is said to be the best known, at least it is worth trying, for physicians seem powerless to cope with the disease successfully. At the first indication of diphtheria in the throat of a child make the room close; then take a tin cup and pour into it a quantity of tar and turpentine, equal parts. Then hold the cup over a fire so as to fill the room with fumes. The little patient, on inhaling the fumes, will cough up and spit out all the membranous matter, and the diphtheria will pass off. The fumes of the tar and turpentine loosen the matter in the throat, and thus afford the relief that has baffled the skill of physicians.

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This pamphlet, now being issued in its FIFTH EDITION, forms a complete refutation of quackery of all kinds, and is a safe and reliable guide, from the medical standpoint, to all young men. EVERY YOUTH should read this pamphlet as a guide to the safe conduct of life in a moral and physical sense.

IMPORTANT ANNOUNCEMENT.

A NEW VOLUME BEGAN WITH THE NUMBER FOR FRIDAY, OCTOBER 4th, 1889.

BONUSES TO SUBSCRIBERS TO "HEALTH."

HEALTH, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the PUBLISHER, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of HEALTH weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of HEALTH so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of HEALTH, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to HEALTH, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and *not to the Editor.*

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

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All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH. A limited space only, is available for the insertion of replies each week.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

DISCOMFORT.—Not at all; we recommended you the bromide simply on the merits of the case, and without reference to what you name.

TRUTH.—1. No danger whatever; continue the La Bourboule Water and Vinolia whenever any of your old symptoms appear. 2. Use the Water as directed on the bottle. You may take it as freely as before; there is no danger in it at all. 3. The use of carbonate of soda constantly is to be condemned; and you should so modify or alter your diet as to avoid its use.

PHOSPHATES.—You have been replied to by post.

STELLA.—1. Better not to mix the oil and the syrup; take the syrup between meals, and the oil after food. 2. Yes; you can do just as you please; if you do not require to take fluid at meals, by all means omit it.

BANJO.—Follow advice given to "G. S." in HEALTH No. 353.

ANXIOUS.—Your fears are groundless; but for full information regarding all health-rules suitable to your case, read the pamphlet recommended to "Mental" in the present number of HEALTH.

J. MCMILLAN.—Wash the head every ten days with Vinolia Soap and tepid water; use a soft brush only, and avoid small combs. Employ the lotion ordered to "Cantor" in HEALTH No. 353.

J. O. B.—India-rubber collars are not injurious to health; and unless they cause irritation or an eruption of the skin, you may wear them safely.

W. H. MCA.—Psoriasis is a very intractable skin-disorder, and difficult to cure; but you should persevere by all means with treatment. Its cause is ill-defined, but it is often inherited, and may not affect the general health at all. Our advice to you is to try chrysophanic acid as an ointment: one drachm of the acid being mixed with one ounce of lard. A piece the size of a pea or bean is to be rubbed into each patch of the disease daily. In some cases where it has been applied to one side only, and the other extremities wrapped in cotton-wool, the *whole* of the eruption disappeared. The acid stains the skin and also the linen. Internally you might with advantage take La Bourboule (an arsenical) Water, if you are not taking arsenic in any other form. If not cured, write again.

W. M. C.—You evidently smoke far too much, and the oppressed symptoms of which you complain are those of "tobacco-heart"—a condition at once removable by your limiting your smoking. For the rest, see, first of all, what a simple tonic will do. Take the Inman's Hypophosphites (advertised in our pages) as ordered to "Onyx" in the present number; and let us hear how you are after a fair trial of this remedy.

TROUBLED.—We advise you to try the Syrup of the Hypophosphites, as a tonic, as directed in the pamphlet you have read. This will brace you up; but you must also have plenty of outdoor exercise, and your diet must be plain but nourishing. Above all, give up brooding over your case; for your cure will as much depend upon cheerfulness of mind as upon any other condition. Try a tepid sponge bath each morning.

O'TARAVISH.—Read in No. 199 HEALTH (to be had from the Publisher) the article on "Blackheads and Acne," and how to treat them. You must press out the blackheads, as this is the only way to get rid of them; but you should also secure free skin action by taking a Turkish bath now and then, and warm baths frequently.

J. A.—Wash the head once every ten days or so with Vinolia Soap and tepid water; and to stimulate hair-growth, use the lotion ordered to "A. P. Sword," in the present number. Use soft brushes only; and write again, in a month or two, if not bettered.

EIGHT FIRST CLASS EXHIBITION AWARDS.

SCOTT'S For Infants, Children, and Persons of Weak Digestion.

MIDLOTHIAN

"Unequalled" **OAT-FLOUR.**

SOLE MAKERS—

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Export Agents: BOYACK & CO., 88, Bishopsgate-street, E.C.

SCOTT'S MIDLOTHIAN OAT-FLOUR.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott, and printed on the tins.—HEALTH.

JAMES HOGG.—Take a warm bath at bedtime, and try twenty grains bromide of potash taken in water. Use Bayley's Wood Oils (advertised in our pages) as a liniment, and rub this preparation well into all affected parts twice or thrice daily.

EBOR.—The trusses made by the Medical Battery Co., 52, Oxford-street, W., will suit you. For a corpulent figure, what you name may do good by way simply of affording support; but you should note our articles in past numbers regarding the diet for obesity.

C. PARKER.—Give Bayley's Wood Oils a trial as a liniment; and clothe warmly. Your ailment is only muscular in origin.

G. SALT.—Your alcohol has hitherto been taken in excess. Give it up altogether, and take as a tonic, suitable to restore your tone, Horsford's Acid Phosphate (see advertisement in our pages).

P. S. F.—1. Take Horsford's Acid Phosphate, as a suitable tonic, as directed on the bottle. 2. Preferably, the last.

S. WOODWARD.—Your cure must be by means of diet, not drugs. Follow the advice regarding food, &c., given to "Whitley," in the last No. of HEALTH; and note also what is said to "Tom Tug" in the present number, and the use of Cascara as a means for curing constipation, which latter condition is probably at the root of your troubles.

LUCY.—Wash the parts regularly with Vinolia Soap, and dust on the parts after washing a little of Woolley's Sanitary Rose Powder. After your meals take fifteen drops Fer Bravais, in water, thrice daily.

ZERO.—If you consult the advertising columns of the daily papers you will see addresses of the kind to which you refer; the advertising pages of the *Lancet* also contain the references you desire.

Tired Brain

Horsford's Acid Phosphate,

A brain food. It increases the capacity for mental labour, and acts as a general tonic. It rests the tired brain, and imparts thereto new life and energy.

Dr. ED. T. JOHNSON, M.R.C.S., 121, Rice-lane, Walton, Liverpool, says: "I have used it with very good results in cases of overtaxed and overworked brains, one in particular, a schoolmaster, where it acted like a charm."

Dr. JNO. LAMBE, M.R.C.S., West Villa, Shurdington, No. Cheltenham, says: "It produced good results in sick headache and brain prostration, tranquillizing the irritation, giving comfortable sleep."

Descriptive pamphlet post-free on application to
Rumford Chemical Works,
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Beware of Substitutes and Imitations.

CAUTION.—Be sure the word "Horsford's" is printed on the label. All others are spurious. Never sold in bulk.

EARL.—Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full information in its pages. Adopt the diet-rules given in its pages, and your troubles will disappear.

BASSANO.—It appears to us that you are suffering simply from subjective sensations, induced firstly by your extreme nervousness, and secondly by the terrible amount of drugs you have from time to time indulged. The pain you refer to is not uncommon in healthy men. It is rather in its way a sign of vigour than of weakness. There will be no harm in your continuing to wear the bandage. We recommend you to take a tepid sponge bath every morning, as an admirable sedative measure, and one which acts beneficially in cases like yours; while all that can be said otherwise of your case is that you should live plainly, avoid indigestible foods, and to dinner take a little stout or good claret to assist assimilation. Give up your miscellaneous drugging; but if your digestion is weak, procure from your druggist some of Burroughs & Wellcome's Cascara, Euonymin, and Nux Tabloids, and use these as directed on the bottle.

NIXON.—Your symptoms point to a need for the proper regulation of your diet for guarding against cold and chill. For the relief of the neuralgic pain, try antipyrin as ordered to "Northern" in last week's HEALTH; and as regards diet, note advice given to "Mrs. Hamilton" in last number. If not cured, write again.

HENRY DAVIS.—1. Yes; it clears the voice; use it in conjunction with the Soden Mineral Pastilles. 2. It dissolves the mucus, acts as an astringent, and renders expectoration easy. 3. Burroughs & Wellcome's.

MAUD MULLER.—1. The powder ordered to "Rodeo" in HEALTH No. 353 may suit your case. 2. If any aperient is needed, try Cascara Cordial (twenty or thirty drops in a little water) or two Cascara Tabloids, and let your food be largely of vegetable nature. 3. There is no possibility of absolutely cutting short a cold; but by inhaling Stern's Pumiline Essence (added to boiling water) and rubbing the chest with Pumiline Liniment, you will materially limit the course of the ailment. Give the child Kepler Cod Oil and Malt after meals to strengthen her.

G. FAIR.—Take a pill composed as follows: Extract of Barbadoes aloes, two grains; extract of nux vomica, half a grain; extract of gentian, a grain and a half. One such pill to be taken once a day, half an hour before meals.

G. B.—Try the following mixture: Bicarbonate of soda, two drachms; dilute hydrocyanic acid, twelve minims; compound infusion of gentian, to eight ounces. Mix. Take a tablespoonful twice daily, an hour before meals.

A. P. SWORD.—Give the following hair-lotion a fair trial, it acts successfully in cases such as that you describe: Aromatic acetic acid, one ounce; vinegar of cantharides, two ounces; spirits of rosemary, three drachms; glycerine, one ounce; rose-water, to make up eight ounces. Mix. Label: "The Hair-Wash: rub a little into the roots each night, either pure or diluted with water."

A. M. LEITH.—Take twenty drops Cascara Cordial in water, once daily, an hour before breakfast; look to your food; avoid tea and coffee, and take Grant's Oat Flour in place thereof as a corrective to constipation; eat stewed fruits, and take light diet for a time.

CAGE.—The only true remedy is that of having the hairs removed by electrical treatment. We can send you address of a specialist in skin diseases who can effect a cure in this way.

ALTON LOCKE.—You will find articles on parasites in HEALTH Nos. 174, 185, and 190. These numbers can be had of the Publisher. There are also the round and thread worms, which inhabit the human digestive system.

PRIM.—A rough way of estimating grain-weights, is that of considering that five grains weight, say, of a powder will cover a sixpence.

ONYX.—Apply a little boracic ointment to the parts night and morning, and internally take a teaspoonful of Inman's Syrup of the Hypophosphites after your meals, in a wineglass of water, twice daily.

MENTAL.—Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and follow out the directions there given as to tonics and electrical remedies. Avoid quacks.

S. E. WARD.—Apply to Messrs. Pulvermacher, 194, Regent-street, London, W.

TOM TUG.—With a small syringe inject a teaspoouful of pure (Price's) glycerine, either by itself or mixed with water. This is an excellent remedy for constipation. Try also Cascara, either in the shape of a liquid extract (twenty drops in water at night) or of tabloids—the latter very handy, and made by Burroughs, Wellcome & Co., Snow-hill-buildings, London, E.C. Your diet should be largely of vegetable nature.

ALEXANDER RAE.—Take the following pill: Powdered ipecacuanha, half a grain; powdered capsicum, one grain; powdered rhubarb, two grains; extract of gentian, three grains. Six such pills to be made, and one to be taken half an hour before dinner when there is any liver-irritation.

SEEDY.—For the bronchitis, take the following mixture: Chloride of ammonium, two drachms; spirits of chloroform, one drachm; simple syrup, three drachms; water, to make up six ounces. A tablespoonful to be taken in water every four hours.

ACORN.—Take a dessertspoonful of Scott's Pure Cod Oil Emulsion after your meals; and each evening, at bedtime, inhale the vapour arising from a pint of very hot water to which you have added a little of Stern's Pumiline Essence.

CATHIE.—Use Sanitas Fluid for the skin and clothes. Use the Powder to the closets and sinks. Sanitas Disinfecting Soap and Cleansing Powder may be used for the house generally.

FRANK HAY.—Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full directions for treatment therein.

CARRINGTON.—A good lotion for blackheads is made by mixing three drachms of sulphur, four drachms of glycerine, and four ounces of rectified spirits. This should be rubbed into the skin at night.

GRECIAN.—We are glad to note that the effect of applying Vinolia in your case has really been beneficial. Use the Vinolia Soap regularly for washing, and continue to apply the Vinolia itself thereafter for a little longer.

P. GRANT.—Use Sanitas Fluid freely in such a case to the skin and clothes. Sanitas Disinfecting Soap may be used for all the woodwork.

IN ALL CASES OF
RHEUMATISM, SCIATICA, LUMBAGO, BACKACHE, Or STIFFNESS,

One Single Rubbing

WITH THE PURE PRODUCT

BAYLEY'S WOOD OILS

Is guaranteed to do more good than Six Similar Rubbings with any other Compound Oil, Embrocation, Liniment, or Patent Medicine advertised for the cure of similar maladies, and the Proprietors of these preparations are challenged to refute this statement if they can.

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Is no American quackery, no mere mixture of Hartshorn and Oil, or other worthless compounds. It is NOT a Patent Medicine, but it is a

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which penetrates to the root of the disease, and thus eradicates the malady which compounds fail to relieve.

DON'T DELAY! DON'T BE DECEIVED!

It has CURED SCORES of the WORST CASES!! IT WILL CURE YOU!!!

Our Proofs.

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Two Surgical Operations Failed to Relieve.

MRS. GRAINGER, 33, Bridgman-street, Walsall, spent sixteen weeks in a hospital suffering torture from Acute Sciatica; she underwent two frightful operations—in one of them having a large piece of flesh removed—but without deriving the least benefit, and was discharged as incurable. She obtained a bottle of BAYLEY'S WOOD OILS, used it according to directions, obtained immediate relief, and by the time the first bottle was completed a cure had been effected.

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MR. A. SALT, Hammersmith, had a severe attack of Chronic Rheumatism in his knee and ankle, and for five months had been unable to walk without the assistance of two sticks. The pain in his limbs was so bad that they felt as if they were broken; scores of remedies had been tried, but had done him no good. As a last resource he determined to use BAYLEY'S WOOD OILS, and, to his great surprise and satisfaction, after the first dressing he obtained relief; and before half the bottle had been applied he had lost all pain, and was able to resume his usual work, and to walk as well as ever.

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MR. FREDERICK CHAMBERS, Oxford-street, Pleck, says: "I suffered for eight weeks acute torture in every limb, sometimes being almost paralyzed with pain. I had tried scores of liniments, recommended by friends, without obtaining any relief, but after using one bottle of BAYLEY'S WOOD OILS, the pains left me, and I now feel better than I have done for months. I strongly recommend all sufferers from Rheumatism to use BAYLEY'S WOOD OILS, and you are at perfect liberty to mention my name in testimony of its great value."

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Send to your nearest Chemist for a bottle of

BAYLEY'S WOOD OILS (Price 1s.),

As it is held in stock by all the leading Wholesale Medicine Houses in London, Liverpool, Edinburgh, and Glasgow. If he hasn't it in stock, he can easily procure it for you. If he refuses to do this, send 15 stamps to the Proprietor,

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MALE ATTENDANTS and NURSES specially for FEVER cases.
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Cure STOUTNESS rapidly and certainly. State height, weight, and send 3/9, 4/6, or 11/- to
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BEECHAM'S PATENT PILLS. ST. HELENS LANCASHIRE

ARE universally admitted to be worth a Guinea a Box for Bilious and Nervous Disorders, such as Wind and Pain in the Stomach, Sick Headache, Giddiness, Fullness and Swelling after Meals, Dizziness and Drowsiness, Cold Chills, Flushings of Heat, Loss of Appetite, Shortness of Breath, Costiveness, Scurvy and Blotches on the Skin, Disturbed Sleep, Frightful Dreams, and all Nervous and Trembling Sensations, &c. The first dose will give relief in twenty minutes.

Every sufferer is earnestly invited to try one box of these Pills and they will be acknowledged to be

WORTH A GUINEA A BOX.

For females of all ages these Pills are invaluable, as a few doses of them carry off all humours, and bring about all that is required. No female should be without them. There is no medicine to be found equal to Beecham's Pills for removing any obstruction or irregularity of the system. If taken according to the directions given with each box they will soon restore females of all ages to sound and robust health. This has been proved by thousands who have tried them, and found the benefits which are ensured by their use.

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Sold by all Druggists and Patent Medicine Dealers everywhere.

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Quickly correct all irregularities, remove all obstructions, and relieve the distressing symptoms so prevalent with the sex. Boxes, 1s. 1½d. and 2s. 9d., of all Chemists. Sent anywhere on receipt of 15 or 34 Stamps by the Maker,

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PURE HORDEUM (Malt Extract) is a most carefully prepared product of the greatest value where a Food of highly nutritious character in *small bulk* is required. Maltose, Dextrine, Albuminoids, and the Phosphates of the Barley are present in the most easily digestible form; hence "it can be taken where M—— and other malt extracts cannot" (L.R.C.P.); and "My patients who could not take M—— or K—— can take your Pure Hordeum without the slightest feeling of nausea" (M.D.).

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